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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,689	03/17/2004	Katsuyuki Nakada	P25057	1890
7055 7590 06/11/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER DUDA, KATHLEEN	
			ART UNIT 1756	PAPER NUMBER
			NOTIFICATION DATE 06/11/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
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<b>Office Action Summary</b>	Application No. 10/801,689	Applicant(s) NAKADA ET AL.	
	Examiner Kathleen Duda	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :06162004; 11222005; 03032006 and 02092007.

**DETAILED ACTION**

1. Claims 1-8 are pending in this application.

***Election/Restrictions***

2. Applicant's election with traverse of Group I, claims 1-4 in the reply filed on May 4, 2007, is acknowledged. The traversal is on the ground(s) that there is not a serious burden to search both inventions. This is not found persuasive because the search for the apparatus is not required for the method.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 5-8 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 4, 2007.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Warren (US 2002/0115016).

Warren teaches a process of forming a resist pattern. Paragraph 0024 teaches applying a negative resist to a substrate. Paragraph 0026 teaches that the resist is irradiated with UV light and then baked at 95°C for at least 5 minutes. Paragraph 0027 teaches that the baked resist layer is developed. Warren teaches the limitations of claim 1 and 3 with "at least 5 minutes" including the recitation of between 10 minutes and 60 minutes.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Spak (US Patent 4,885,232).

Spak teaches a high temperature, post-exposure baking treatment. A positive photoresist (novolak resin) is exposed to radiation and then baked at 120-160 °C for 15 to 90 seconds and the developed (see column 5, lines 61-68 and examples). The limitations of claim 1 are taught by Spak.

7. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wood (US Patent 5,138,469).

Wood teaches a process whereby a photosensitive material is exposed to radiation (column 4, lines 25-26) followed by heating at 120-140 °C for 30 to 90 minutes (see column 5, lines 1-11). Wood teaches the limitations of claims 1, 2 and 4.

8. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Angelopoulos (US Patent 2002/0123010).

In Example 1, Angelopoulos teaches a process of forming a resist pattern whereby after exposing the resist to light, it is heated at 100 °C for about 5 minutes which meets the limitations of claims 1 and 2.

9. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shimada (US Patent 7,087,362).

Shimada teaches in column 22 to heat a photoresist layer after exposure at 80-150 °C for 10 seconds to 5 minutes. Shimada teaches the limitations of claims 1, 2 and 4.

10. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Buffat (US Patent 6,576,405).

Buffat teaches a photolithographic process whereby a positive photoresist is applied to a substrate and then exposed to UV light (step 230 of Figure 2) followed by a post-exposure bake at 110-120 °C for 90-120 seconds (step 240 of Figure 2). The baked resist is then developed (step 250 of Figure 2). See the abstract. Buffat teaches the limitations of claims 1, 2 and 4.

11. Claim 1 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yamane (US 2003/0118953).

Yamane teaches a heat developable photoresist. The resist is a photosensitive silver halide which is exposed to light and developed at a temperature of 110-130 °C (see paragraph 0366) for 1-60 seconds (see paragraph 0368). Yamane teaches the limitations of claim 1 because the claim uses open language which does not preclude the heating and developing occurring simultaneously.

### ***Conclusion***

12. Any inquiry concerning this communication should be directed to Examiner K. Duda at (571) 272-1383. Official FAX communications should be sent to (571) 273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff, can be reached at 571-272-1385.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kathleen Duda  
Primary Examiner  
Art Unit 1756